



String, Pebbles, and Gravity

Location: Southwest Guatemala

Weather Conditions: 87 degrees Fahrenheit, Humidity 88%, Rain 20%

Day 3: Inside King Ixtua's Tomb, 8:13 AM

Evan looked into the tunnel. The ExploroBot was about four feet away but still moving towards the tunnel exit. A few minutes earlier the ExploroBot had reached the trigger; some unusual sounds were heard behind the tomb door and then a loud BANG! While Evan listened for his bot to turn around and return, his uncle and a few other team members began pushing on the large stone door.

"It's opening!" yelled Uncle Phillip. "Keep pushing."

As the ExploroBot reached the end of the tunnel, Evan picked it up, looked it over for any damage, and then turned it off. He then turned to watch as Uncle Phillip, Max, and Grace finished pushing against the large stone door. Beyond the door, all Evan could see was darkness.

Uncle Phillip picked up a large flashlight, turned it on, and shone the beam into the tomb. Evan stepped closer for a look. As Uncle Phillip moved the light around the small inner room, the group could see a stone floor, but that was about it; few details could be seen.

"It doesn't appear that any damage was done when we opened the door," said Uncle Phillip.

"Good, I was worried my robot might not actually be able to trigger the pressure plate," replied Evan.

Uncle Phillip turned to Evan and smiled. "Evan, if I were your history teacher, I'd give you straight-A's for the rest of the school year. That was amazing," he said.

Max and Grace nodded and smiled.

"Thanks," Evan replied. "Glad I could help. So . . . what's next?"

Uncle Phillip took off his cap and scratched his head. "Well, I think we need to go and review the manuscript again."

Evan raised his eyebrows. "More traps?" he asked with a smile.

Evan watched as Uncle Phillip instructed one of the Guatemalan guides to guard the door and let no one inside. Uncle Phillip then waved his hand. "Come on. Let's go take a look at that manuscript."

More Monkey Business

Back in the tent, Uncle Phillip had pulled out the enlargements of the Tupaxu manuscript. Each enlargement was actually a photograph of a page of the manuscript. From what Evan could determine, the original pages were slightly larger than notebook paper sheets, but the enlargements were poster-sized.

Max took one of the enlargements, clipped it to a clothesline running across the tent, and then turned to Uncle Phillip.

Uncle Phillip was seated next to Evan and Grace. “Okay, this is the page that corresponds to the tomb’s reception room. Grace, you’re a better translator than I. What do you think?”

Grace stood up and walked over to the hanging picture. She then pointed at some of the Mayan writing. “One of the written legends about King Ixtua mentioned the word ‘akh.’ The translation is ‘vine.’ This drawing here contains the Mayan glyphs for vine and monkey. Take a closer look at this sketch right here,” she said, pointing to a small picture.

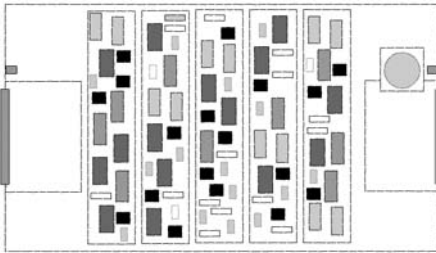


Figure 5-1. *Sketch of the reception room*

“Keep in mind,” Grace continued, “that Tupaxu was well known for designing other tombs with elaborate triggering mechanisms. Some of these triggers were to open doors or passage-ways . . . and some were to trigger traps. What I think you’re looking at here is a combination of the two.”

Uncle Phillip, Evan, and Max examined the small picture.

“That looks like a jar or cup,” Evan said, pointing to the image. “And that’s got to be another door, right?”

Uncle Phillip nodded. “Yes. The manuscript does mention a series of obstacles before reaching King Ixtua’s burial chamber. If this is one of those obstacles, my guess is that there is a trigger in this room to open that door,” he said.

Grace pointed at a small block of Mayan symbols below the picture. “This roughly translates to ‘Chuen Ra Rock Drop.’”

“What’s a ‘Chuen Ra’?” asked Evan.

“Chuen means monkey,” said Max. “The monkey’s name must be Ra.”

Grace nodded. “Yes, and this little bit of writing here is very important.” She pointed to some more Mayan glyphs. “This translates to ‘shaky ground.’ I think this part of the reception room floor is a trap,” she said.

Uncle Phillip pointed to a tiny round circle in the picture. Above the circle was a line drawing of a monkey and below it was the jar Evan had pointed out. Several of the tiny circles were drawn inside the jar as well. “Could that be a pebble?” he asked.

“We’ll need to examine the actual space, but I have a guess about this room,” said Grace. “I think the floor is a trap and cannot be crossed until this jar is filled with pebbles. The jar is probably sitting on a small trigger that will open the next door when the weight of the pebbles in the jar becomes heavy enough. It’ll probably also allow us to cross the floor without triggering a trap.”

“I think you’re right,” said Uncle Phillip. “And it does fit with the legend about using monkey keys to enter the tomb. I don’t think this vine would be strong enough for a person to cross, do you? Okay, it’s time to go take a look.”

Vine Challenge

At Uncle Phillip’s request, a few of the expedition’s guides installed two large tripod lamps just inside the tomb entryway. Thick power cables ran out of the tomb and were plugged into a small generator that was running. Bright light from the tripod lamps flooded the reception room.

Max and Grace had followed Uncle Phillip into the reception room. Evan had been asked to wait until it was determined the room was safe. After a few minutes of quiet discussion, Evan heard his uncle yell out “Come on in, Evan!”

Evan walked slowly into the tomb. To his right were the two tripod lamps. Uncle Phillip, Max, and Grace were standing on a stone platform, approximately eight feet wide and six feet deep. Beyond the stone platform, the floor was a pattern of small rust-brown bricks that extended for another fifteen feet, and on the other side of the room were another small platform and a door.

“Stay on the platform, Evan,” said Uncle Phillip.

“Yes, sir,” Evan replied.

Grace pointed at the floor. “The bricks are probably covering pressure plates. If we step on them, the far door will probably be blocked for good,” she said.

“Or worse,” replied Max. “The Rupa tomb was designed by Tupaxu and it had poisonous spears that dropped from holes in the ceiling.”

The group all looked up at the tomb’s ceiling and took a few steps back.

Evan looked across the room. “There’s the jar, right where the picture indicated. And what’s that above it?” he asked.

To the left of the door was a raised platform with a small carved wooden jar sitting on top. Three feet above the jar was a small wood peg that was embedded in the wall.

Grace turned and looked to her left. “It’s a peg. Identical to this one,” she replied and pointed. On the left wall near the tomb entrance was a similar wood peg, embedded in the wall at the same height as the other peg.

“Those pegs are where the vine was tied,” said Max. “Of course, 700 years has passed and the vine has decayed.” Max scratched his head. “You know, if we could manage to get a rope tied to both pegs, someone could climb over to the other side.”

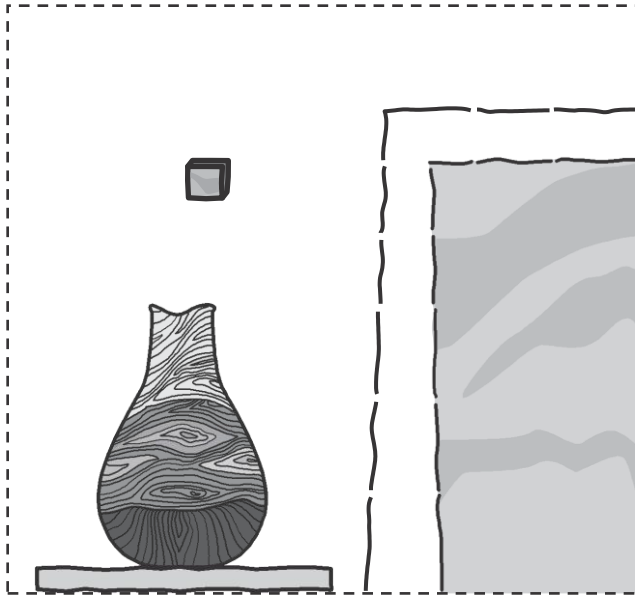


Figure 5-2. *Near the stone door are a wooden jar and a stone peg.*

Uncle Phillip shook his head. “It won’t work. Look at those pegs. They’re small, and I doubt they’d hold the weight of any one of us. Tupaxu designed them correctly. Only a monkey could get across.”

“Or a small robot,” replied Evan.

Uncle Phillip, Max, and Grace all turned and looked at him.

Evan’s Solution

“I think the hardest part is going to be getting some string around that far peg,” said Evan.

Uncle Phillip had gathered his team in the equipment tent. Everyone was busy digging in boxes, looking for a ball of string or twine. “That’s if we can even find some,” Max replied.

“Keep looking. I know we brought some strong twine,” said Uncle Phillip. “Okay, Evan. Tell us again what you have in mind.”

Evan had pitched his idea quickly in the tomb about using a robot, but hadn’t given any details. He took a deep breath and spoke slowly. “From what I could see, the monkey would cross to the other side of the room on the vine, holding one or two small pebbles with his feet, and drop the pebbles into the jar. So what I need to do is create something that holds a small pebble, crosses over on a string or some twine, drops the pebble, and comes back for another pebble.”

“Found it!” yelled Grace. She held up a small ball of tan-colored twine.

Uncle Phillip pulled a small chair over to where Evan was seated and sat down. “It would have to be fairly lightweight, Evan. I don’t think those pegs will hold much weight. And you’ll have to figure out a way to drop a pebble accurately into the jar.”

Evan nodded. “I’m pretty certain I can do this,” he said. “What I need someone else to do is find a way to get that string tied to the far peg.”

Max walked over to Evan and sat down. “How long do you think you’ll need to create the bot?” he asked.

“I’m not sure,” replied Evan. “At least four or five hours. Sorry.”

Max smiled. “Don’t apologize. It might take us that long to get the string looped around the peg.”

“I have an idea,” said Uncle Phillip. “We might be able to take some of the lightweight fiberglass rods that we use to reinforce our tents and tape them together to make a long pole. They won’t bend or break.”

Grace nodded. “If we tie the twine to a small ring, we could slide the ring off the pole and onto the peg,” she said. “I think we can do this.”

Uncle Phillip nodded. “Okay, then. Evan is going to get started on the robot. Grace and Max are going to get the string attached to both pegs. And since it’s almost lunch time, I’m going to go and get all of you some sandwiches so you don’t have to stop working.”

While Max and Grace began to talk about locating the fiberglass poles, Evan opened up the yellow toolbox and pulled out the small brown notebook. He flipped it open to a blank journal page and began to write.

Story continues in Chapter 9...